5.12 G5 (ADI) with GPS/VHF Navigator

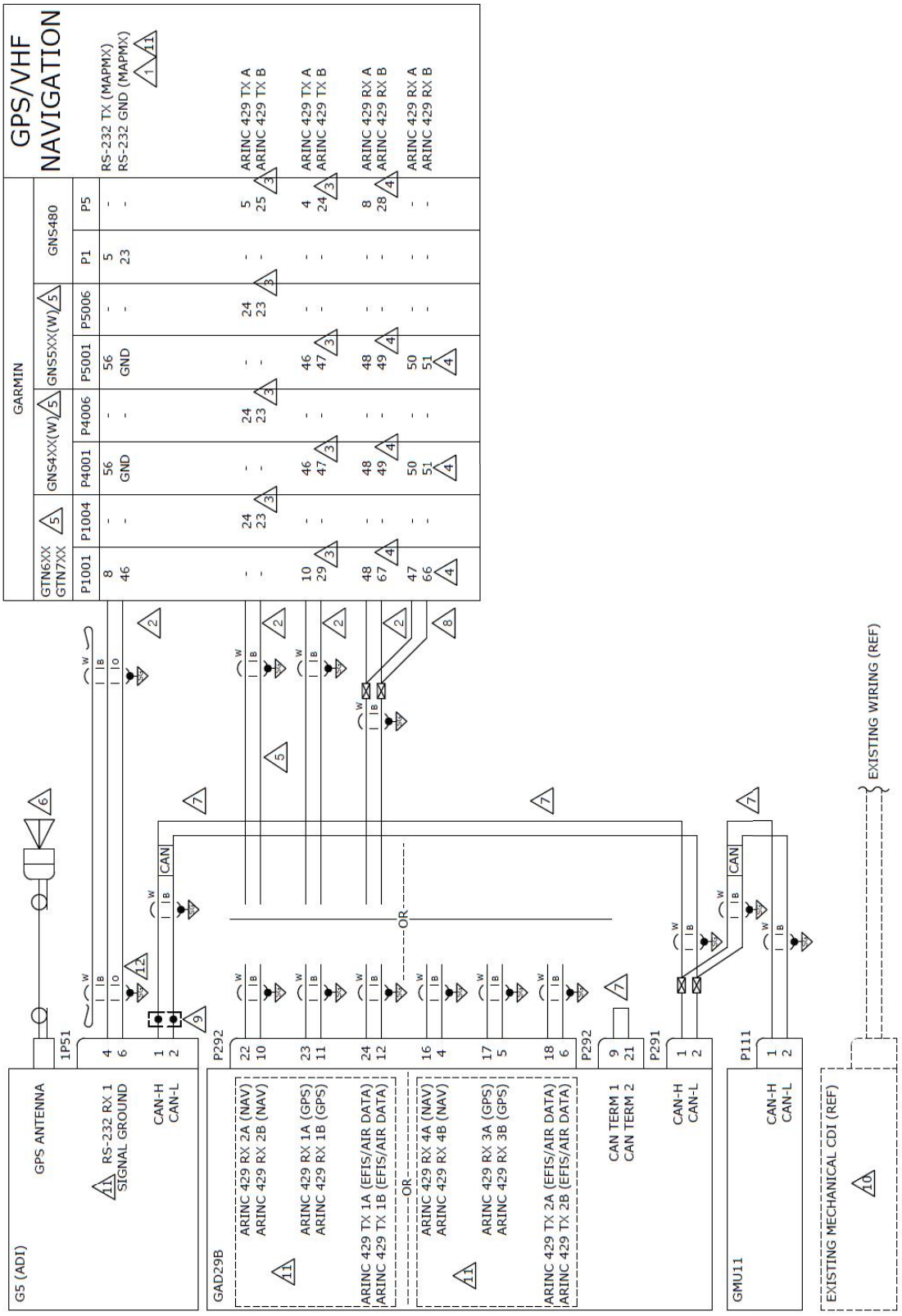
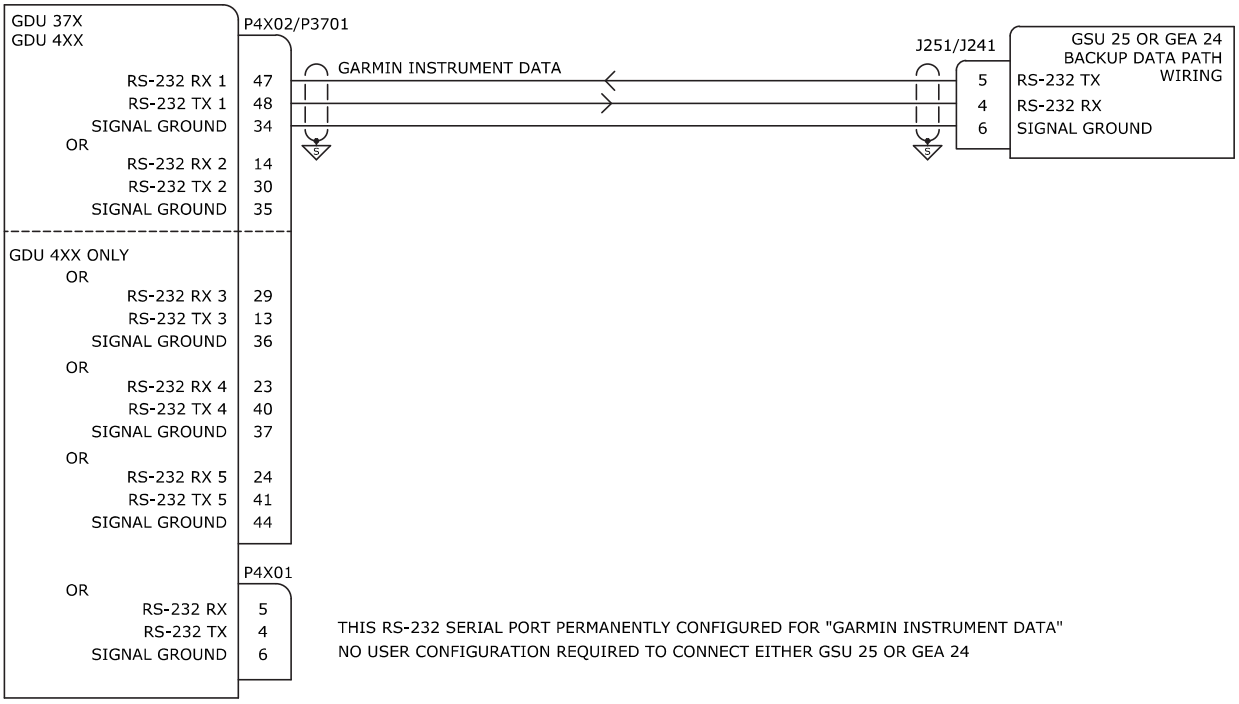


Figure 5-14 G5(ADI) with GPS/VHF Navigator



CONFIGURATION GUIDANCE

1. GDU 37X/4XX

A. CONFIGURE THE GDU RS-232 SERIAL PORT (1-5) TO WHICH THE GSU 25 OR GEA 24 BACKUP PORT IS CONNECTED TO "GARMIN INSTRUMENT DATA"

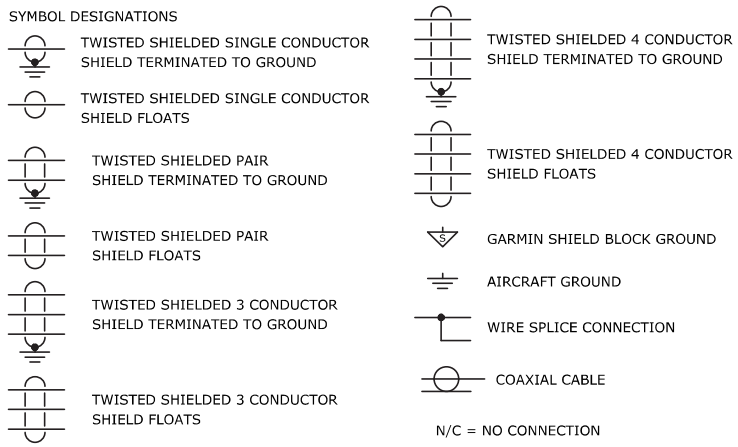
B. NO GSU 25 OR GEA 24 CONFIGURATION REQUIRED.

Figure 27-1.11 GEA 24/GSU 25 - GDU 37X/4XX Backup Data Path Interconnect Drawing

30 SENSOR WIRING EXAMPLES

30.1 Notes for Section 30 Drawings

1. UNLESS OTHERWISE NOTED, ALL STRANDED WIRE MUST CONFORM TO MIL-W-22759/16 OR EQUIVALENT
2. UNLESS OTHERWISE NOTED, ALL SHIELDED WIRE MUST CONFORM TO MIL-C-27500 OR EQUIVALENT
3. UNLESS OTHERWISE NOTED, ALL WIRES ARE 24 GAUGE MINIMUM.
4. SYMBOL DESIGNATIONS



5. UNLESS OTHERWISE NOTED, ALL SHIELD GROUNDS MUST BE MADE TO THE RESPECTIVE UNIT BACKSHELLS. ALL OTHER GROUNDS SHOULD BE TERMINATED TO AIRCRAFT GROUND AS CLOSE TO THE RESPECTIVE UNIT AS POSSIBLE.
6. UP TO 4 FUEL QUANTITY GAUGES CAN BE CONFIGURED. THE FUEL QUANTITY 1/2 AND MAIN FUEL 1/2 CONFIGURATION OPTIONS ARE MUTUALLY EXCLUSIVE AND EACH LABEL CAN ONLY BE USED FOR ONE CHANNEL. SEE THE G3X INSTALLATION MANUAL FOR ADDITIONAL GUIDANCE ON FUEL QUANTITY GAUGE CONFIGURATION.
7. EI P-300C CAPACITANCE TO FREQUENCY CONVERTERS CAN BE USED FOR MEASUREMENT OF CAPACITIVE FUEL QUANTITY.
8. IF FUEL 1 AND 2 CHANNELS ARE USED FOR RESISTIVE TYPE FUEL QUANTITY INPUTS, THE ASSOCIATED FUEL PULL UP PINS MUST BE WIRED TO THE +10V TRANSDUCER POWER OUTPUT AS SHOWN FOR PROPER OPERATION. FUEL PULL UP PINS SHOULD NOT BE USED IF INSTALLING THE SKYSPORTS OR WESTACH FUEL SENDERS. IF USING WESTACH SENDERS, VERIFY THE SPECIFIC MODEL USED IS COMPATIBLE WITH +12VDC AND PROVIDES A 0-5V OUTPUT.
9. THE CHANNELS USING FUEL 3 AND FUEL 4 AS PART OF THEIR INPUT NAME CAN BE CONFIGURED TO MEASURE A RESISTIVE TYPE FUEL QUANTITY SENSOR. RESISTORS MUST BE RATED TO A MINIMUM OF 1/4 WATT. EXTERNAL PULL UP RESISTORS SHOULD NOT BE USED IF INSTALLING THE SKYSPORTS FUEL PROBES. IF USING WESTACH SENDERS, VERIFY THE SPECIFIC MODEL USED IS COMPATIBLE WITH +12VDC AND PROVIDES A 0-5V OUTPUT.
10. THE CAP 2 / FUEL FLOW 2 CHANNEL CAN OPTIONALLY BE CONFIGURED TO MEASURE EI P-300C FUEL QUANTITY, OR CONFIGURED TO MEASURE RETURN LINE FUEL FLOW. IF A FUEL FLOW TRANSDUCER IS WIRED TO THIS INPUT THE MEASURED FUEL FLOW WILL BE SUBTRACTED FROM THE MEASURED FUEL FLOW 1 INPUT AS PART OF A DIFFERENTIAL FUEL FLOW CALCULATION.
11. THE CHANNELS USING GP (GENERAL PURPOSE) AS PART OF THEIR INPUT NAME CAN BE CONFIGURED TO MEASURE AMPS THROUGH A HALL EFFECT TRANSDUCER. THE CHANNEL WILL BE CONFIGURED TO EXPECT A 15.9 MV / AMP SIGNAL. SEE THE G3X INSTALLATION MANUAL FOR ADDITIONAL GUIDANCE ON CONFIGURATION AND CALIBRATION OF A HALL EFFECT TRANSDUCER.
12. IF MEASURING BATTERY CURRENT, PLACE THE SHUNT BETWEEN THE BATTERY POSITIVE TERMINAL AND THE BATTERY CONTACTOR. IF MEASURING ALTERNATOR CURRENT, PLACE THE SHUNT BETWEEN THE ALTERNATOR B LEAD AND THE POWER DISTRIBUTION BUS.
13. WHEN USING A DISCRETE INPUT FOR ITEMS FOR DETECTING ITEMS SUCH AS CANOPY CLOSURE, IT IS RECOMMENDED TO USE THE GROUNDED STATE AS THE NORMAL SWITCH POSITION (E.G. CANOPY CLOSED) TO AVOID THE POSSIBILIY OF A LATENT FAILURE SUCH AS A BROKEN WIRE OR MICROSWITCH. SEE THE G3X INSTALLATION MANUAL FOR ADDITIONAL DETAILS ON CONFIGURATION OF DISCRETE INPUTS.
14. FLAPS/TRIM INPUTS CAN BE WIRED TO ANY AVAILABLE INPUT WITH "POS" IN THE NAME. UP TO 4 POSITION INDICATORS CAN BE DISPLAYED.
15. THE USE OF "XX" AS A GROUND CONNECTION PIN NUMBER ON THIS DRAWING INDICATES THE SENSOR GROUND CAN BE TIED TO ANY SIGNAL GROUND OR TRANSDUCER LOW GROUND PIN ON THE GSU 73 J732 CONNECTOR. MULTIPLE SENSOR GROUNDS MAY NEED TO BE TIED TO A SINGLE GSU 73 GROUND PIN.
16. FOLLOW THIS WIRING GUIDANCE IF USING UMA PRESSURE TRANSDUCERS INSTEAD OF THE TRANSDUCERS PROVIDED IN THE GARMIN SENSOR KIT.
17. WHEN A DISCRETE OUTPUT IS ACTIVE, IT IS PULLED TO GROUND AND CAN SINK UP TO 20 MA OF CURRENT MAXIMUM. SEE THE G3X INSTALLATION MANUAL FOR ADDITIONAL DETAILS ON USE OF DISCRETE OUTPUTS.
18. WHEN USING THE GP6 AND GP7 INPUTS FOR GENERAL PURPOSE VOLTAGE SENSING, INCLUDING POSITION SENSORS AND USER-DEFINED ANALOG PARAMETERS, THE CORRESPONDING GP6 LO AND GP7 LO PIN MUST BE CONNECTED TO GROUND.

Figure 30-1 Notes for Sensor Wiring Example Drawings (for all Section 30 drawings)

30.2 Sensor Wiring Examples w/GEA 24

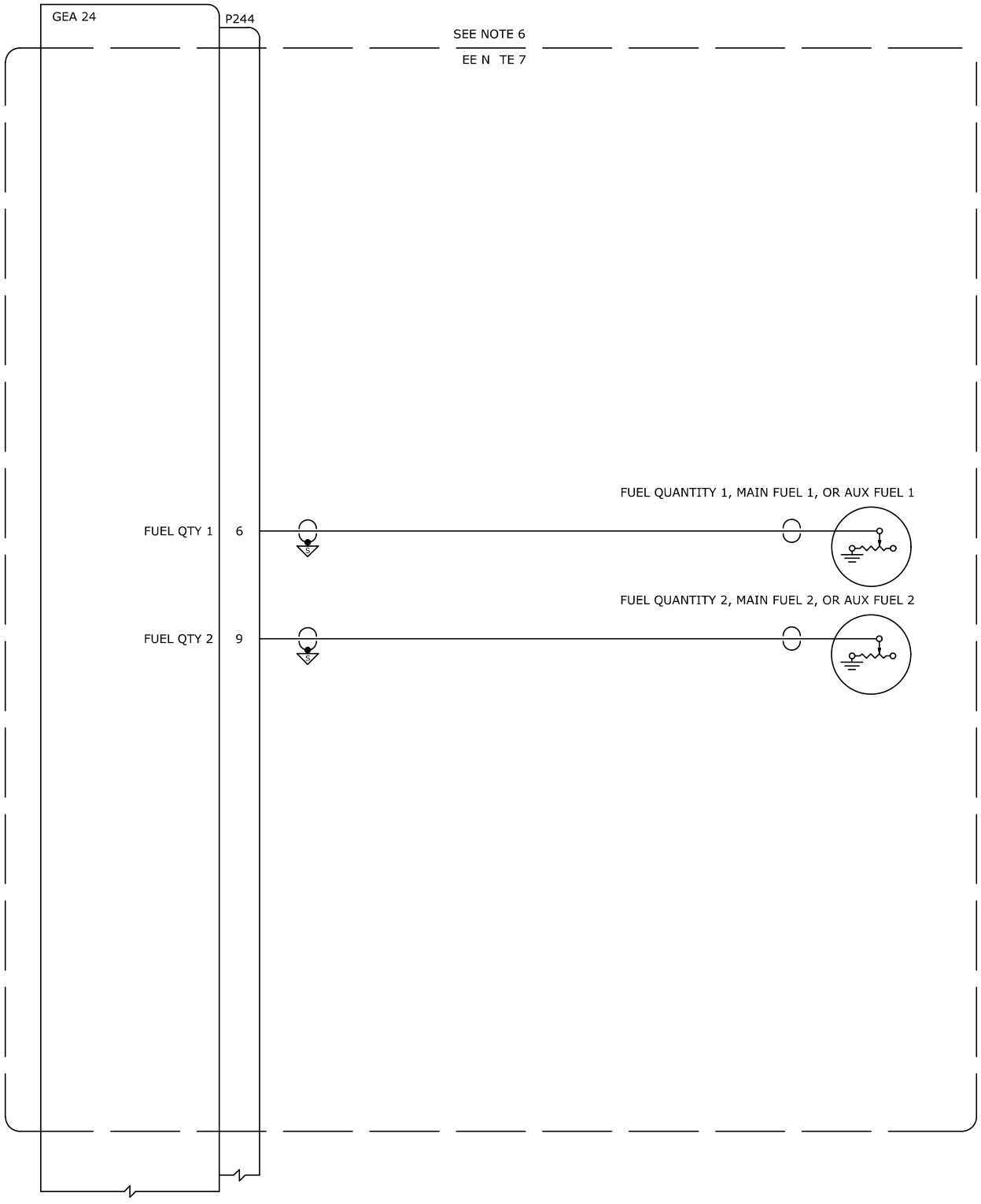


Figure 30-2.1 Page 1 of 2 Fuel Quantity and Fuel Flow Examples (w/GEA 24)

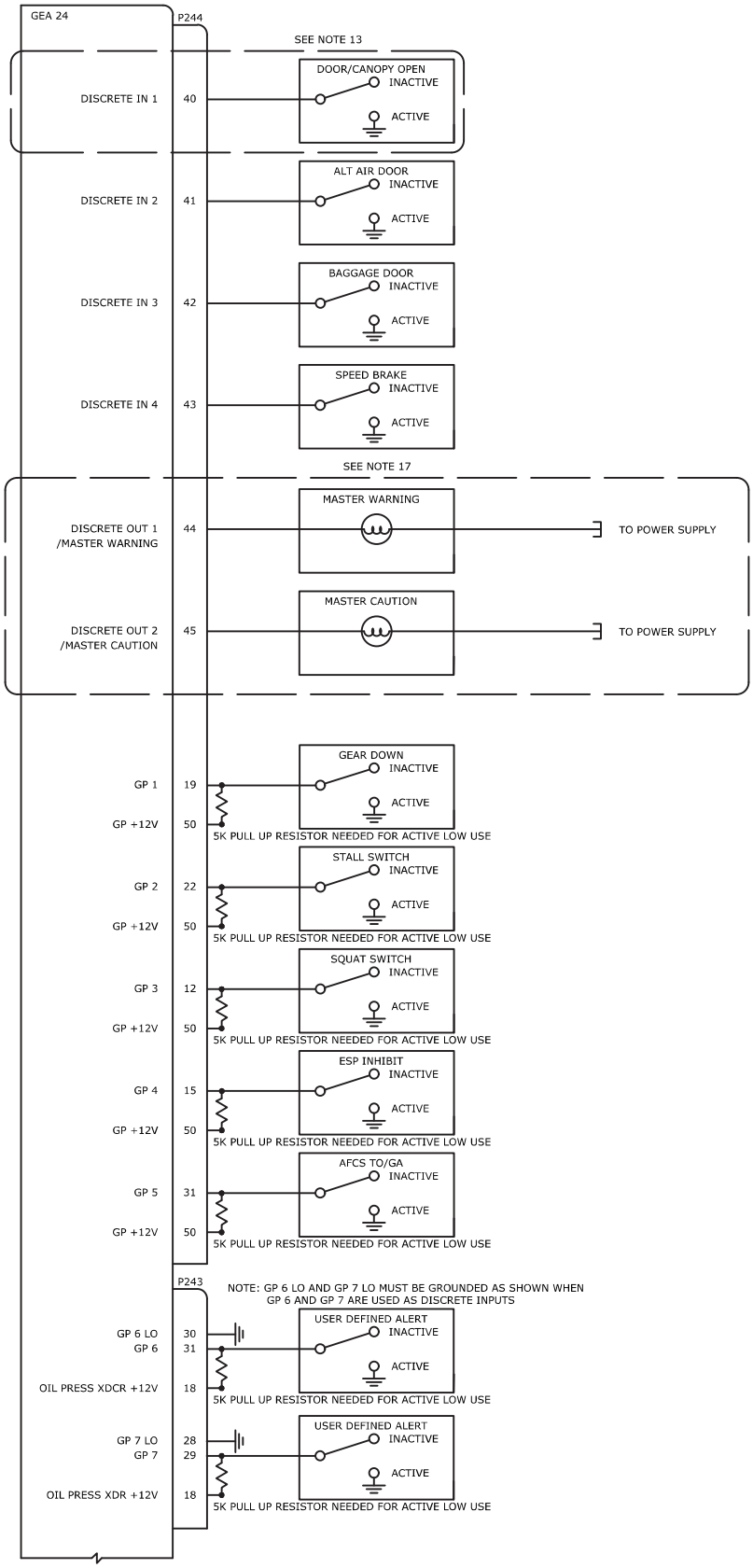


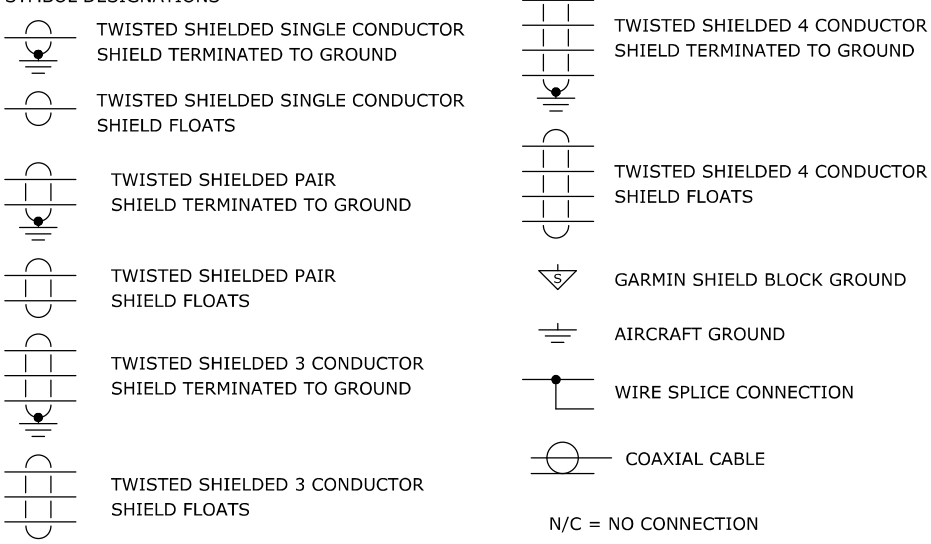
Figure 30-2.2 Page 2 of 2 Electrical and Discrete Input/Output Examples (w/GEA 24)

31 LYCOMING/CONTINENTAL SENSOR WIRING EXAMPLES

31.1 Notes for Section 31 Drawings

NOTES

1. UNLESS OTHERWISE NOTED, ALL STRANDED WIRE MUST CONFORM TO MIL-W-22759/16 OR EQUIVALENT
2. UNLESS OTHERWISE NOTED, ALL SHIELDED WIRE MUST CONFORM TO MIL-C-27500 OR EQUIVALENT
3. UNLESS OTHERWISE NOTED, ALL WIRES ARE 24 GAUGE MINIMUM.
4. SYMBOL DESIGNATIONS



5. UNLESS OTHERWISE NOTED, ALL SHIELD GROUNDS MUST BE MADE TO THE RESPECTIVE UNIT BACKSHELLS. ALL OTHER GROUNDS SHOULD BE TERMINATED TO AIRCRAFT GROUND AS CLOSE TO THE RESPECTIVE UNIT AS POSSIBLE.
6. THE RPM CHANNEL CAN BE CONFIGURED FOR UMA TACH SENDERS SHOWN OR 4 OR 6 CYLINDER ELECTRONIC IGNITION INPUTS.
7. GROUNDING METHODS FOR ELECTRONIC TACH SIGNALS MAY VARY BASED ON THE MANUFACTURER. CONSULT THE ELECTRONIC IGNITION MANUFACTURER DOCUMENTATION FOR SPECIFIC GROUNDING GUIDANCE. THE CAP FUEL 1/ RPM 2 INPUT (GSU 73) OR RPM 2 (GEA 24) INPUT CAN BE OPTIONALLY USED ON AIRCRAFT WITH DUAL ELECTRONIC IGNITION.
8. SENSORS SHOWN ARE INCLUDED IN THE GARMIN 4 AND 6 CYLINDER SENSOR KIT P/N K00-00512-00 OR K00-00513-00.
9. PINOUT SHOWN FOR PACKARD CONNECTOR SUPPLIED WITH KAVLICO PRESSURE TRANSDUCERS. WIRE COLORS ARE SHOWN FOR REFERENCE ONLY. ALWAYS CONFIRM CORRECT SENSOR CONNECTIONS USING SENSOR MANUFACTURER DOCUMENTATION BEFORE CONNECTING WIRES.
10. IF MEASURING BATTERY CURRENT, PLACE THE SHUNT BETWEEN THE BATTERY POSITIVE TERMINAL AND THE BATTERY CONTACTOR. IF MEASURING ALTERNATOR CURRENT, PLACE THE SHUNT BETWEEN THE ALTERNATOR B LEAD AND THE POWER DISTRIBUTION BUS.
11. ONLY APPLICABLE TO SIX CYLINDER ENGINES.
12. NOT INCLUDED IN THE GARMIN 4 AND 6 CYLINDER SENSOR KIT P/N K00-00512-00 OR K00-513-00.
13. TIT PROBES ONLY APPLICABLE TO TURBOCHARGED ENGINES.
14. ONLY APPLICABLE TO CARBURETED ENGINES.
15. LIGHT SPEED ENGINEERING PLASMA III "B" AND "C" MODELS REQUIRE A 2.2K PULL DOWN RESISTOR FOR PROPER OPERATION. PLASMA III "A" MODELS AND PLASMA II MODELS DO NOT REQUIRE A PULL DOWN RESISTOR FOR PROPER OPERATION. PLASMA III "B" AND "C" MODELS MODIFIED FOR OPEN COLLECTOR TACH OUTPUT ALSO DO NOT REQUIRE A PULL DOWN RESISTOR FOR PROPER OPERATION.

Figure 31-1 Notes for Lycoming/Continental Sensor Drawings (for all Section 31 drawings)

31.2 GEA 24 - Lycoming/Continental Sensor Drawings

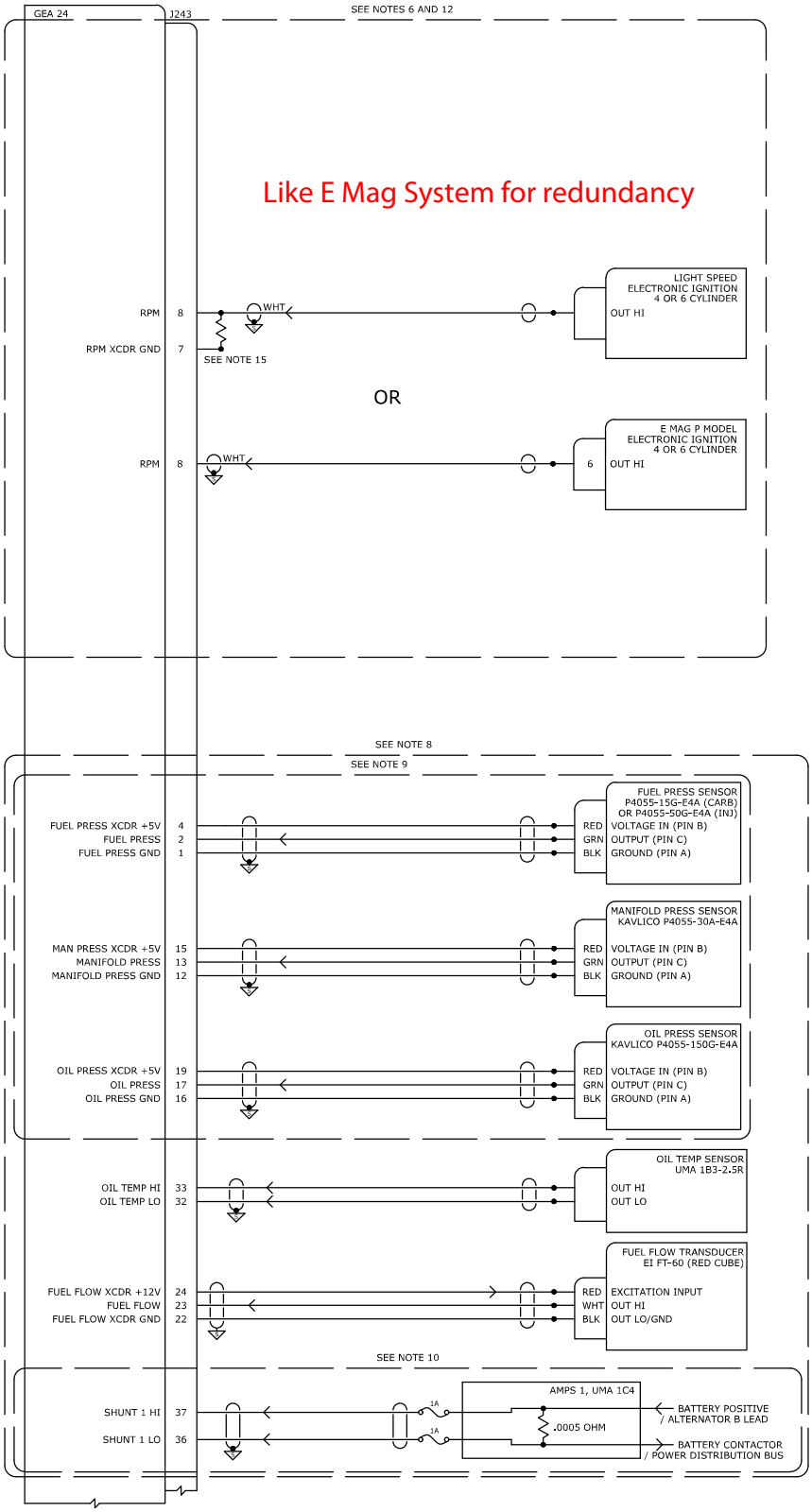
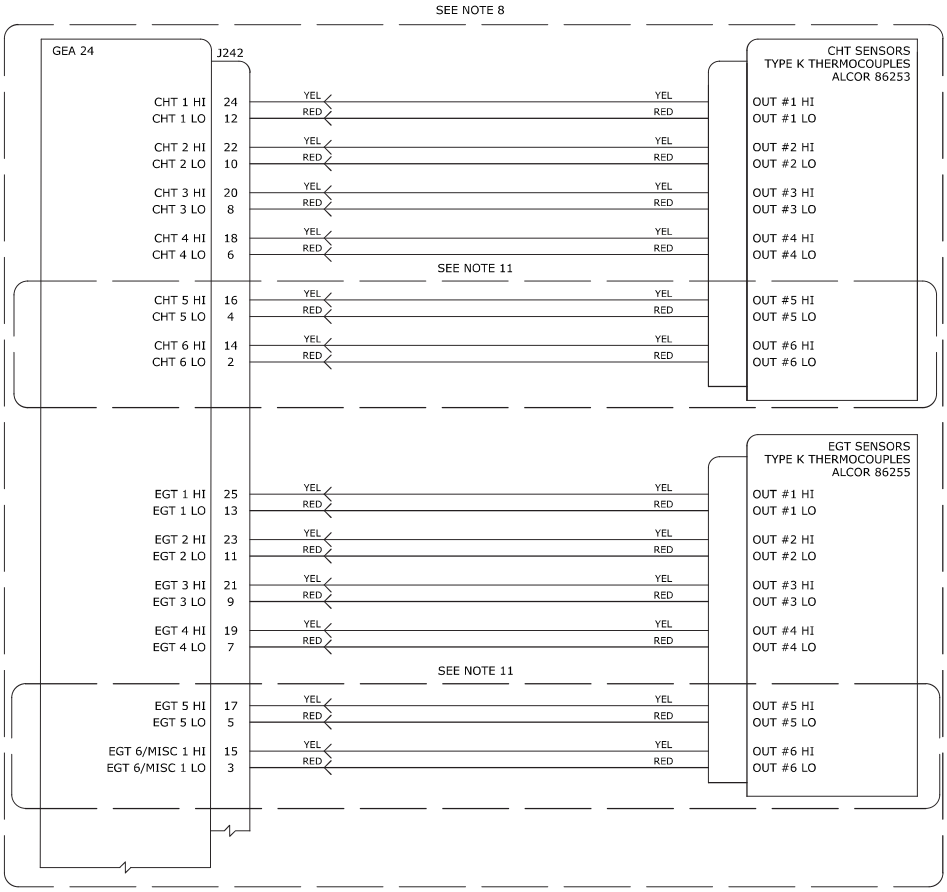


Figure 31-2 GEA 24 - 4/6 Cylinder Lycoming/Continental Sensor Wiring Examples, Page 1 of 2



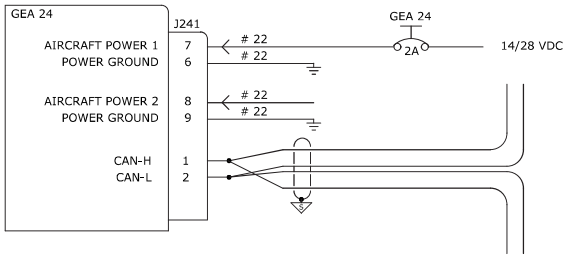
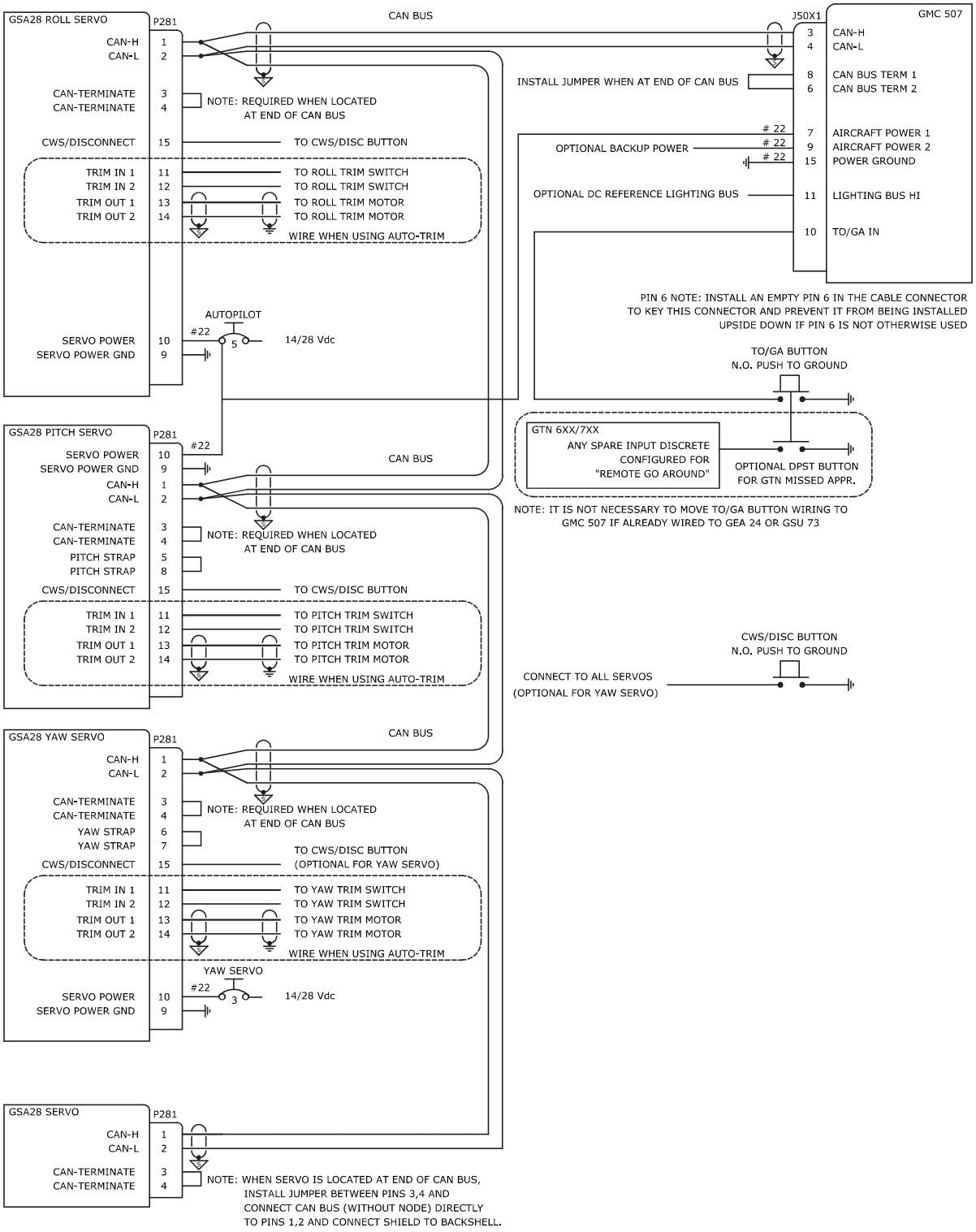


Figure 31-2 GEA 24 - 4/6 Cylinder Lycoming/Continental Sensor Wiring Examples, Page 2 of 2



CONFIGURATION GUIDANCE

1. G3X

A. ON THE GDU 4XX/37X CONFIG MODE LRU EQUIPMENT CONFIGURATION PAGE

- SET AUTOPILOT SERVOS TO ONE OF FOLLOWING:
  "ROLL ONLY", "PITCH + ROLL", OR "PITCH + ROLL + YAW"

Figure 27-1.8 GMC 507/GSA 28 Interconnect Drawing

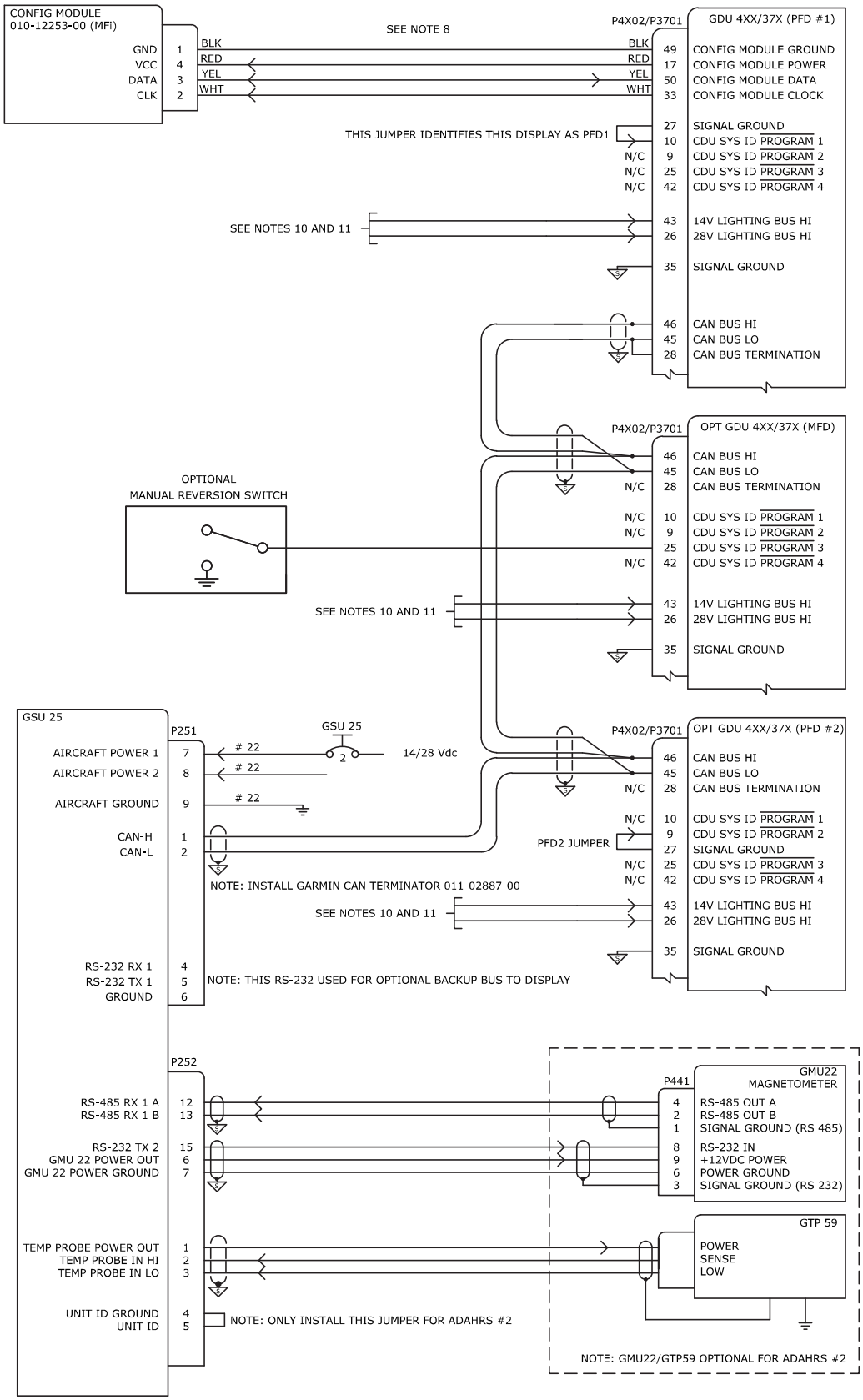
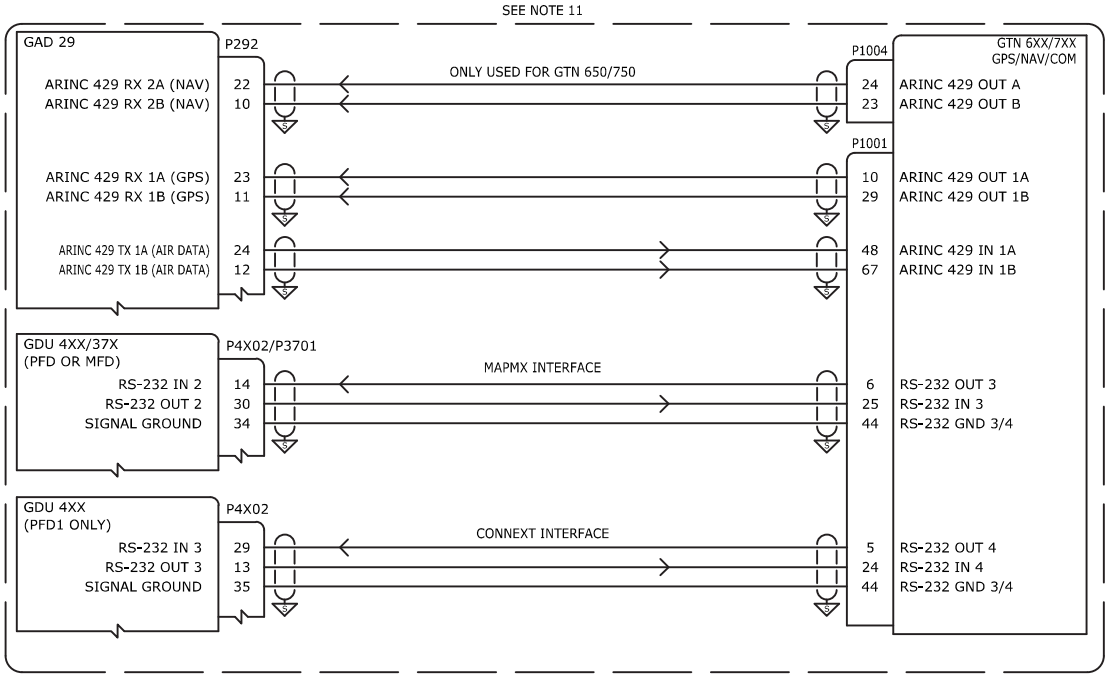


Figure 27-1.2 GDU/GMU 22/GSU 25 Interconnect Drawing

NOTE: THIS INTERFACE EXAMPLE DRAWING IS NOT SUFFICIENT FOR INSTALLATION OF A GTN 6XX/7XX SERIES PRODUCT. CONTACT A LOCAL GARMIN AVIONICS DEALER FOR COMPLETE INSTALLATION INFORMATION.



CONFIGURATION GUIDANCE

1. GTN 6XX/7XX

A. ON THE ARINC 429 CONFIG PAGE
- SET IN 1 SPEED TO "LOW"
- SET IN 1 DATA TO "EFIS FORMAT 2"
- SET OUT 1 SPEED TO "LOW"
- SET OUT 1 DATA TO "GARMIN 429" (GTN V6.50 AND LATER)
- SET OUT 1 DATA TO "GAMA FORMAT 1" WHEN "GARMIN 429" NOT AVAILABLE
- SET SDI TO "LNAV 1"

B. ON THE RS-232 CONFIG PAGE
- SET CHNL 3 INPUT TO "MAPMX FORMAT 2" WHEN THIS FORMAT IS AVAILABLE
- SET CHNL 3 OUTPUT TO "MAPMX" WHEN "MAPMX FORMAT 2" INPUT NOT AVAILABLE
- SET CHNL 4 INPUT/OUTPUT TO "CONNEXT FORMAT 2" WHEN CONNEXT IS USED

C. ON THE MAIN MAIN INDICATOR (ANALOG) CONFIG PAGE
- SET SELECTED COURSE FOR VLOC TO "IGNORED"

D. ON THE VOR/LOC/GS ARINC 429 CONFIG PAGE
- SET NAV RADIO TO "ENABLED"
- SET TX SPEED TO "LOW"
- SET SDI TO "VOR/ILS 1"

2. G3X

A. ON THE GDU 4XX/37X RS-232 AND ARINC 429 CONFIG MODE PAGES
- SET THE CONNECTED GDU 4XX/37X RS-232 CHANNEL TO "MAPMX"
- SET ARINC 429 TX 1 FORMAT TO "EFIS/AIRDATA FORMAT 1" AND "NAV 1"
- SET ARINC 429 RX 1 FORMAT TO "GARMIN GPS" AND "NAV 1"
- SET ARINC 429 RX 2 FORMAT TO "GARMIN VOR/ILS" AND "NAV 1"

B. ON THE GDU 4XX RS-232 CONFIG MODE PAGE WHEN CONNEXT IS USED
- SET THE CONNECTED GDU 4XX (PFD) RS-232 CHANNEL TO "GTN CONNEXT 2"

NOTE:
BEGINNING WITH GTN V6.00 SOFTWARE, "MAPMX" FORMAT IS REPLACED WITH "MAPMX FORMAT 1" AND "MAPMX FORMAT 2" IS ADDED AS A BI-DIRECTIONAL INPUT/OUTPUT FORMAT USED FOR RADIO TUNING OF THE GTN COM RADIO.

Figure 27-2.18 Single GTN 6XX/7XX Interconnect/Configuration Example

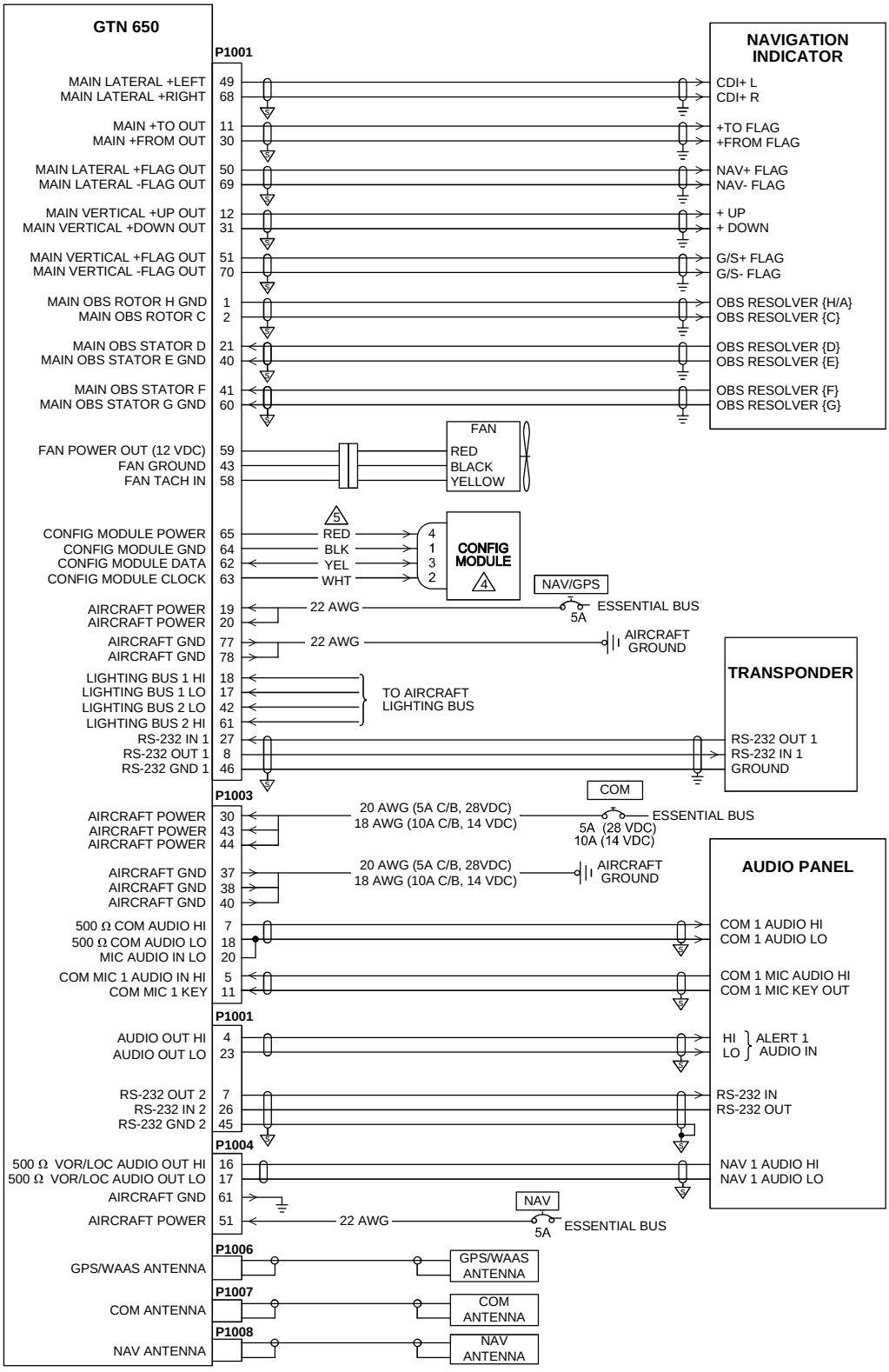


Figure D-2. GTN 650 Typical Installation
Sheet 1 of 2

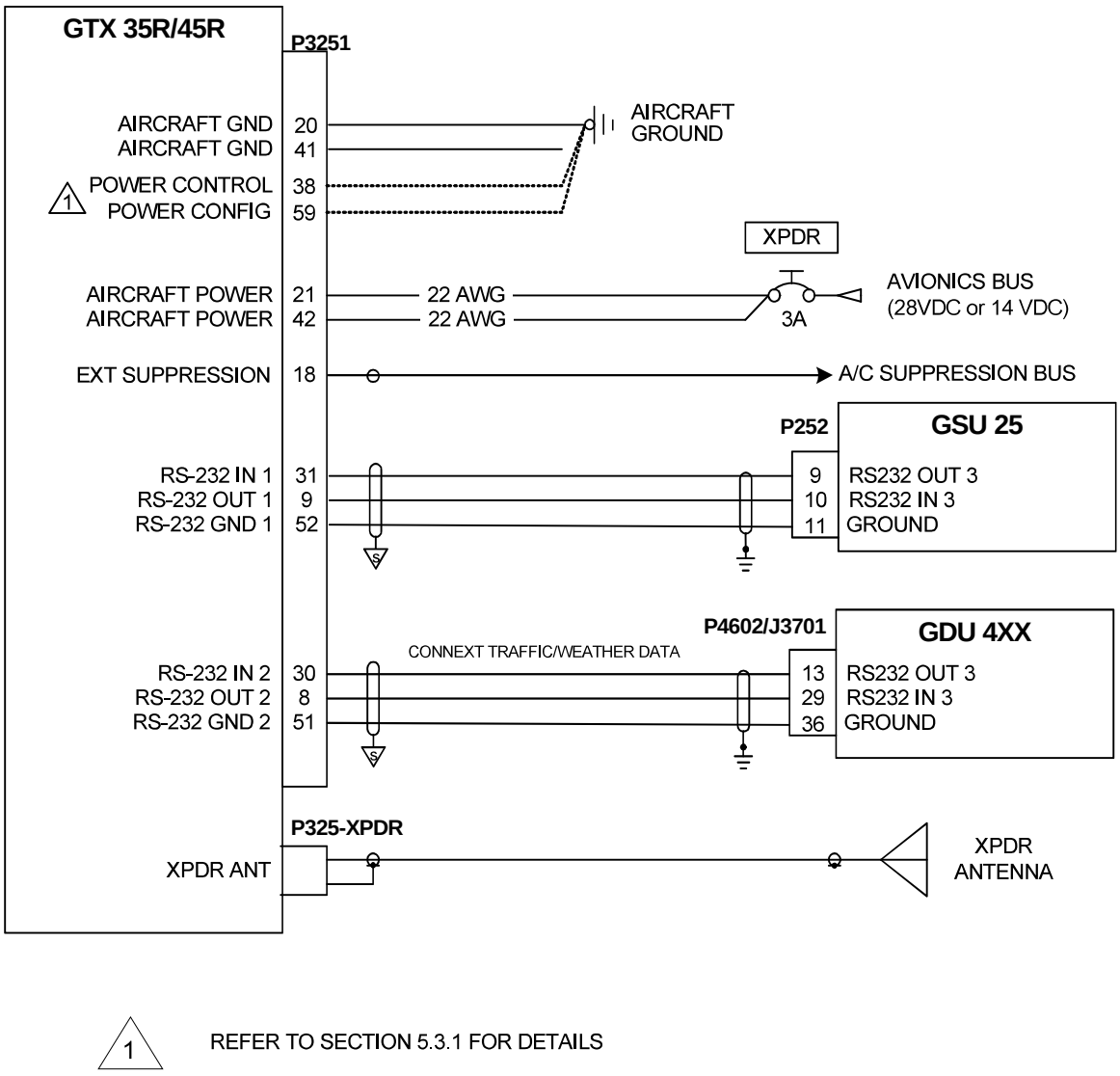


Figure C-1 GTX 35R/45R Typical Interconnect

Refer to the G3X Installation manual for a complete wiring diagram.

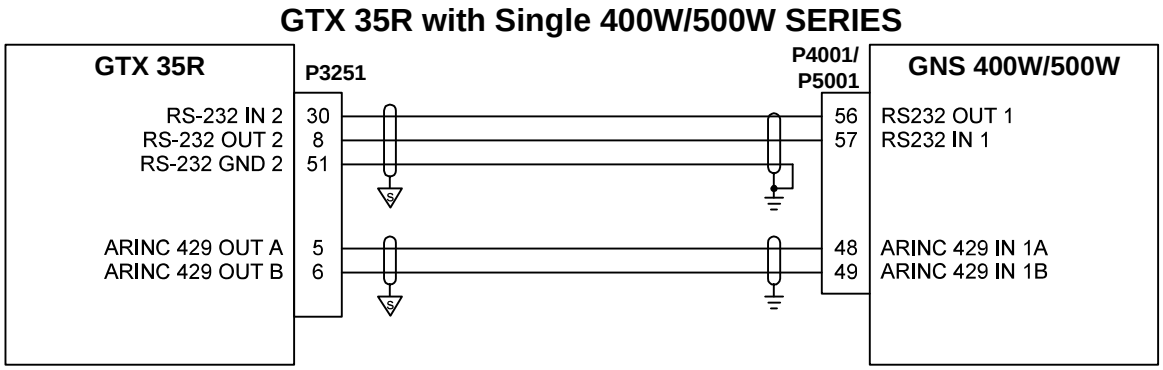


Figure C-6 GTX 35R - GNS 400W/500W Series Interconnect

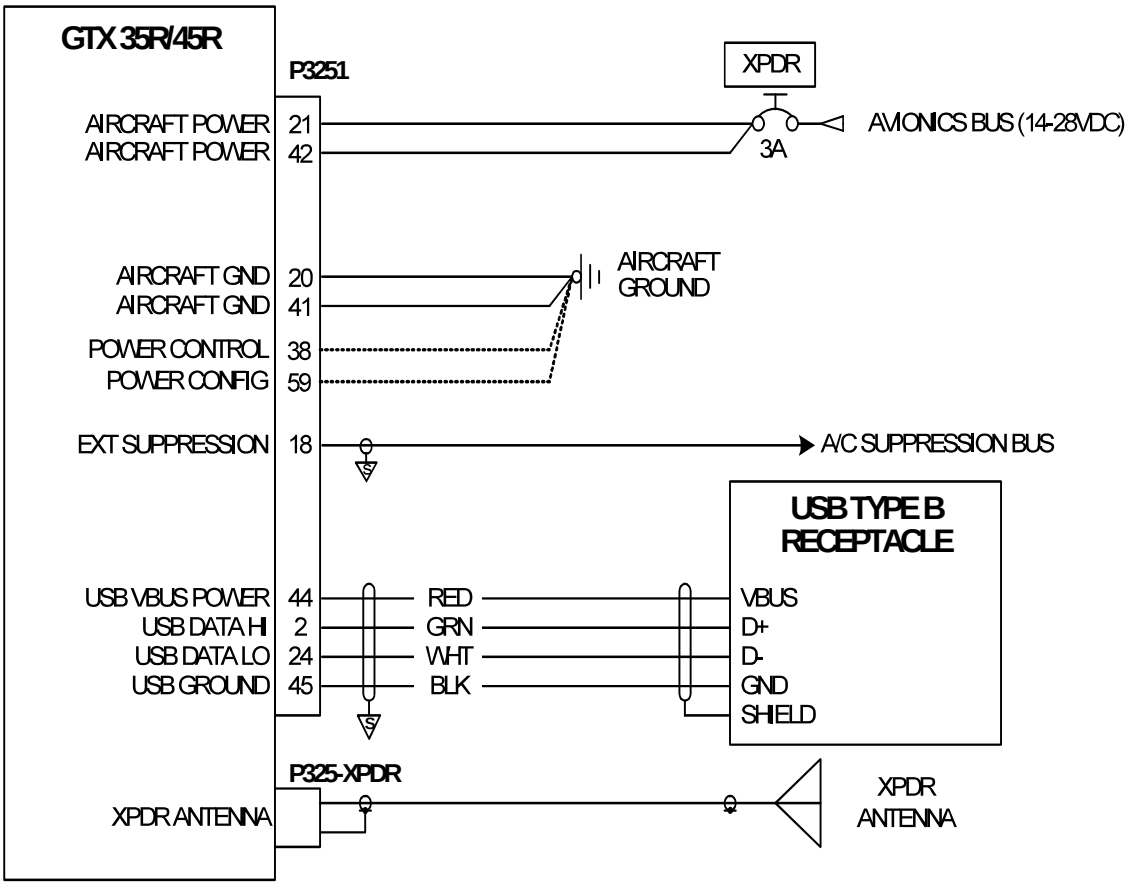
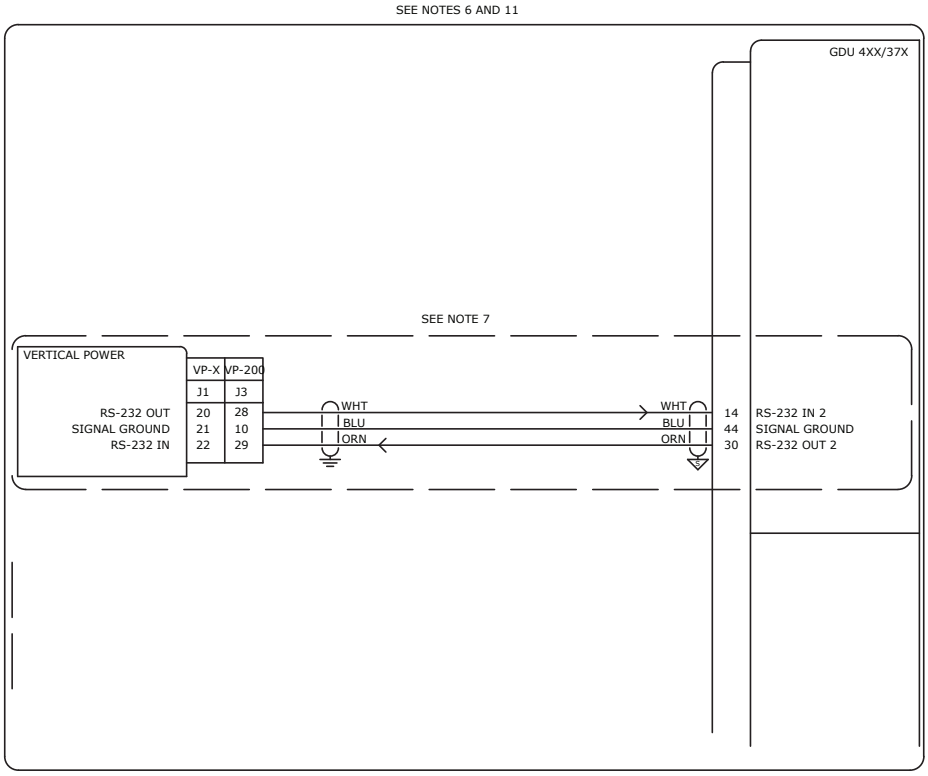


Figure C-7 USB Programming Interface (Garmin Dealers Only)

NOTE: THIS INTERFACE EXAMPLE DRAWING IS NOT SUFFICIENT FOR INSTALLATION OF AN SL 30, SL 40, GTR 225, OR GNC 255. CONTACT A LOCAL GARMIN AVIONICS DEALER FOR COMPLETE INSTALLATION INFORMATION.



CONFIGURATION GUIDANCE

1. GDU 4XX/37X TO SL40, GTR 200, OR GTR 225

A. ON THE GDU 4XX/37X RS-232 CONFIG MODE PAGE
- SET CONNECTED GDU 4XX/37X RS-232 CHANNEL FORMAT TO "GARMIN VHF COMM"

B. NO SL40 OR GTR 200 CONFIGURATION REQUIRED

C. CONFIGURE GTR 225 SERIAL PORT IO MODE TO "NMEA" ON SYS CONFIGURATION PAGE

2. GDU 4XX/37X TO SL30 OR GNC 255

A. ON THE GDU 4XX/37X COMM CONFIG MODE PAGE
- SET CONNECTED GDU 4XX/37X RS-232 CHANNEL FORMAT TO "GARMIN VHF NAV/COMM"

B. ON THE SL30 NAV SETUP PAGES
- SET INDICATOR HEAD TYPE TO "SERIAL"

C. ON THE GNC 255 CONFIGURATION PAGES
- SET CDI INDICATOR TYPE TO "SERIAL" ON NAV CONFIGURATION PAGE
- SET SERIAL PORT IO MODE TO "NMEA" ON SYS CONFIGURATION PAGE

3. GDU 4XX/37X TO VERTICAL POWER VP-X OR VP-200

A. ON THE GDU 4XX/37X RS-232 CONFIG MODE PAGE
- SET CONNECTED GDU 4XX/37X RS-232 CHANNEL FORMAT TO "VERTICAL POWER"

B. ON THE GDU 4XX/37X EIS CONFIG MODE PAGE
- SET THE "VOLTS 1" AND "VOLTS 2" INPUTS TO ONE OF THE FOLLOWING BASED ON WHAT INPUTS HAVE BEEN CONNECTED TO THE VP-X OR VP-200:
  - NONE
  - VERTICAL POWER MAIN BATT VOLTS
  - VERTICAL POWER AUX BATT VOLTS
  - VERTICAL POWER BUS 1 VOLTS
  - VERTICAL POWER BUS 2 VOLTS
- SET THE "SHUNT 1" AND "SHUNT 2" INPUTS TO ONE OF THE FOLLOWING BASED ON WHAT INPUTS HAVE BEEN CONNECTED TO THE VP-X OR VP-200:
  - NONE
  - VERTICAL POWER MAIN BUS AMPS
  - VERTICAL POWER BUS 1 AMPS
  - VERTICAL POWER BUS 2 AMPS

C. REFERENCE VERTICAL POWER DOCUMENTATION FOR ADDITIONAL INSTALLATION AND CONFIGURATION GUIDANCE

Figure 27-2.6 GDU 37X/4XX - External LRU Interconnect Examples (page 1 of 2)